

AMENDMENT TO THE CLAIMS

Please cancel claims 24, 26, 27, 30, 32 and 43-48 without prejudice and add new claims 49 -56 as follows:

Claims 1 - 48. Cancelled

49. (new) An oil burner assembly, comprising:

a) an oil distribution nozzle;

b) a manifold i) constructed of a unitary body of a thermally transmissive material and ii) having first and second continuous passageways, wherein each of said first and second passageways terminates at inlet and outlet ports, wherein said oil distribution nozzle is coupled to the outlet port of said first passageway;

b) a source of oil coupled to the inlet port to said first passageway such that the oil flows through said first passageway and is discharged from said nozzle;

c) a source of heated liquid coupled to the inlet and outlet ports of said second passageway to flow through said second passageway such that the liquid flow heats the manifold and transfers the heat to elevate the temperature of oil flowing in said first passageway to a combustible temperature as the oil is discharged from the nozzle; and

c) an igniter mounted to said manifold and aligned to said nozzle to ignite the heated oil discharged from said nozzle.

50. (new) An oil burner assembly as set forth in claim 49 wherein said nozzle comprises an oil and air distribution nozzle, wherein the outlet port of the first passageway includes first and second cavities, wherein said second cavity is coaxially aligned upstream of said first cavity, wherein an oil distribution portion of said nozzle mounts in said first cavity, wherein the manifold includes a third passageway that

terminates in said second cavity, wherein an air distribution portion of said nozzle mounts in said second cavity, and including a source of pressurized air coupled to an inlet port to said third passageway such that air is heated in said third passageway prior to being discharged from the nozzle to atomize heated oil discharged from the nozzle.

51. (new) An oil burner assembly as set forth in claim 50 wherein said second passageway comprises a plurality convoluted portions.

52. (new) An oil burner assembly as set forth in claim 50 wherein a narrowed of said third passageway includes a plurality of narrowed portions that couple to said second cavity and wherein said second cavity abuts and is concentrically aligned to said first cavity.

53. (new) An oil burner assembly, comprising:

a) an oil and air distribution nozzle;

b) a manifold i) constructed of a unitary body of a thermally transmissive material and ii) having first, second and third continuous passageways, wherein said first passageway terminates in first and second coaxially aligned cavities, wherein said second cavity is coupled upstream of said first cavity, wherein an oil distribution portion of the nozzle mounts in said first cavity and an air distribution portion of the nozzle mounts in the second cavity, and wherein said third passageway terminates at said second cavity;

c) a source of oil coupled to an inlet port to said first passageway such that the oil flows through said first passageway and is discharged from said nozzle;

d) a source of heated liquid coupled to an inlet port to said second passageway to flow through said second passageway to an outlet port such that the liquid flow heats the

manifold and transfers the heat to elevate the temperature of oil flowing in said first passageway to a combustible temperature as the oil is discharged from the nozzle;

e) a source of pressurized air coupled to an inlet port to said third passageway such that the air is heated via heat transferred from the liquid as the air flows through said third passageway prior to being discharged from the nozzle to atomize the heated oil discharged from the nozzle; and

f) an igniter mounted to said manifold and aligned to said nozzle to ignite the heated and atomized oil discharged from said nozzle.

54. (new) An oil burner assembly as set forth in claim 52 wherein said third passageway comprises a first portion and a plurality of second portions that branch from said first portion, wherein said second portions exhibits longitudinal cross-sections smaller than a longitudinal cross-section of said first portion, and wherein said second portions couple to said second cavity.

55. (new) A method of operating an oil burner, comprising the steps of:

a) providing a source of oil;

b) providing a source of heated liquid;

c) providing a manifold coupled to an oil distribution nozzle, wherein said manifold is constructed of a thermally transmissive block of metal, wherein first and second displaced, continuous channels are formed into said manifold and respectively terminate at inlet and outlet ports, and wherein an oil distribution portion of the nozzle is coupled to the outlet port of said first channel;

d) coupling said source of oil to the inlet port to said first channel and said source of heated liquid to the inlet and outlet ports of said second channel and wherein said first

and second channels are arranged in said manifold such that liquid flowing through said second channel transfers heat to oil flowing in said first channel to elevate the temperature of said oil to a combustible temperature as the heated oil is discharged from the nozzle; and

e) igniting the heated oil upon discharge from the nozzle oil distribution port.

56. (new) A method as set forth in claim 53 wherein said nozzle comprises an oil and air distribution nozzle, wherein said manifold includes a third channel terminating at inlet and outlet ports, wherein said third channel comprises a first portion and a plurality of second portions that branch from said first portion, wherein said second portions exhibit longitudinal cross-sections narrower than a longitudinal cross-section of said first portion, and wherein said second portions couple to an air distribution portion of said nozzle and including the steps of providing a source of pressurized air and coupling said air source to the inlet port to said third channel such that the air is heated in said third channel prior to being discharged from the nozzle to atomize heated oil discharged from the nozzle.